Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221
April 7, 2003

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Mr. Steve Warren, General Manager
Washington TRU Solutions, LLC
P.O. Box 2078
Carlsbad, NM 88221-2078

RE: Transmittal of Audit Report for Audit A-03-17

Dear Mr. Warren:

The Carlsbad Field Office performed Audit A-03-17 of Washington TRU Solutions (WTS) on March 17-20, 2003. The audit team concluded that the overall status of the WTS Quality Assurance Program is adequate, satisfactorily implemented and effective.

The details of the audit as well as conclusions are detailed within the attached audit report.

If you have any questions or comments, please contact me at (505) 234-7442.

Sincerely,

M. Lea Chism

M. Lea Chism
Quality Assurance Specialist

Enclosure

cc: w/enclosure
A. Holland, CBFO *ED
M. Eagle, EPA *ED
B. Walker, EEG *ED
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U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

AUDIT REPORT

OF

WESTINGHOUSE TRU SOLUTIONS (WTS)

CARLSBAD, NEW MEXICO

AUDIT NUMBER A-03-17

MARCH 17-20, 2003

WTS QUALITY ASSURANCE PROGRAM

Prepared by: Amelia I. Arceo, CTAC
Audit Team Leader

Date: 4/2/03

Approved by: Ava L. Holland, CBFO
Quality Assurance Manager

Date: 4/7/03

1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Audit A-03-17 was conducted to verify the Washington TRU Solutions (WTS) Repository Development Project's implementation of applicable quality assurance (QA) requirements defined in ASME NQA-1, 1989 edition, and the CBFO and WTS Quality Assurance Program Documents (QAPDs). The audit also evaluated the adequacy, implementation, and effectiveness of the WTS Repository Development Project's implementing procedures. The audit was conducted at the Waste Isolation Pilot Plant (WIPP) March 17 – 20, 2003.

The audit team concluded that overall, the WTS Repository Development Project's QA Program is adequate relative to the flow-down of requirements from the CBFO QAPD and ASME NQA-1, 1989 edition. In addition, the audit team concluded that the implementing procedures are satisfactorily implemented and are effective.

The audit team identified two conditions adverse to quality resulting in the issuance of two CBFO corrective action reports (CARs) that require corrective actions. The first CAR (CAR 03-048) relates to QA records not maintained in accordance with the QAPD requirement, and the second CAR (CAR 03-049) relates to calibration instruments that were not calibrated. Two isolated deficiencies requiring only remedial corrective actions regarding a log that had overwritten and red ink entries, and an engineering change order (ECO) that had added information that was not initialed and dated. Both were corrected during the audit (CDA). Two Recommendations were offered for management consideration. The CARs, CDAs and Recommendations are described in Section 6.0.

2.0 SCOPE

The audit team evaluated the adequacy, implementation, and effectiveness of the WTS Repository Development Project's implementing procedures in the following areas:

Mine Operations
Underground Services
Hoisting
Mine Maintenance
Mine Engineering
Geotechnical Engineering

The evaluation of the WTS Repository Development Project's implementing procedures for adequacy was based on the CBFO QAPD, CAO-94-1012, Rev. 3, November 1999, and ASME NQA-1, 1989 edition.

3.0 AUDIT TEAM AND OBSERVERS

CBFO AUDIT TEAM

Lea Chism	CBFO Management Representative
Amelia I. Arceo	Audit Team Leader, CTAC

Norman Frank	Auditor, CTAC
Tommy Putnam	Auditor, CTAC
Martin Navarrete	Auditor, CBFO
Jim Waters	Technical Specialist, CTAC
Joe Field	Technical Specialist, CTAC

OBSERVERS/INSPECTORS

Ben Walker	Observer, Environmental Evaluation Group (EEG)

4.0 AUDIT PARTICIPANTS

Individuals contacted during the audit are identified in Attachment 1. A pre-audit conference was held in the WTS Support Building conference room on March 17, 2003. The audit was concluded with a post-audit conference held in the WTS Support Building conference room on March 20, 2003.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

The audit team concluded that overall, the WTS Repository Development Project's implementing procedures are adequate relative to the flow-down of requirements from the ASME NQA-1, 1989 edition, and the CBFO and WTS QAPDs. In addition, the audit team concluded that the implementing procedures are satisfactorily implemented and are effective.

5.2 QA Program Audit Details

The evaluation to NQA-1 requirements started with the review of WTS Repository Development Project implementing procedures to ensure that NQA-1 and CBFO QAPD requirements flowed into the implementing procedures. The WTS Repository Development Project's implementing procedures were found to be adequate in addressing the requirements.

The WTS Repository Development Project's implementing procedures reviewed during the audit are identified in Attachment 2. The audit was conducted through interviews with key personnel, review of objective evidence, and observation of activities (as applicable). The results and audit conclusions are contained in the audit checklists maintained by CBFO as QA records.

5.2.1 Mine Operations

The audit team evaluated the following Underground Services Department implementing procedures:

WP 04-AD3008, Rev. 4, *Shift Operating Logs*
WP 04-AD3011, Rev. 2, *Equipment Tagout/Lockout*

WP 04-AD3012, Rev. 3, *Temporary Plant Modification Control*
WP 04-AU1007, Rev. 3, *Underground Openings Inspections*
WP 04-AU1027, Rev. 1, *Underground Diesel Engine Emissions*

The audit team verified that Mining Operations had implemented the following procedures: Shift Operating Logs, Equipment Tagout/Lockout, Underground Openings Inspections, and Underground Diesel Engine Emissions. The team identified problems with one of the three shift operating logs. The problems were associated with AIS Hoist Log 2002, which had entries that were overwritten, items circled to indicate only that portion was performed, and on one day all entries were made using red ink. The manager and facility engineer reviewed each entry in AIS Hoist Log 2002 and those that were incorrect were corrected during the audit (see CDA 1). The audit team also made a recommendation that persons making entries in the operations log book use their entire name at least once to better identify themselves, or provide another method to ensure that initials can be associated with the individual making the entry (see Recommendation 1).

The audit team concluded that overall, mining operations activities were adequate, satisfactorily implemented, and effective.

5.2.2 Underground Services

The audit team evaluated the following Underground Services Department implementing procedures.

WP-04-CM 1304, Rev. 6, *CMS Equipment Operation*
WP-04-VU1608, Rev. 6, *Underground Ventilation and Filtration System Operation*
WP-04-FP1401, Rev. 6, *Underground Fuel Station Operation*
WP-04-ED 1621, Rev. 6, *Underground Electrical Distribution*
WP-04-ED1631, Rev. 6, *Underground Backup Power Distribution*

The audit team interviewed underground service personnel and verified that appropriate procedures and or checklists are implemented for conducting the following underground activities: ventilation and filtration operations, electrical/backup power distribution, and fuel station operations. Operations log books and the underground active disposal room ventilation rate log sheets were reviewed and found to be satisfactory.

The audit team also observed the underground roving watch inspections being performed in accordance with the operations round sheets and verified them to be satisfactory. Personnel training files were reviewed and the audit team verified that personnel conducting work in their areas were trained and qualified in accordance with applicable procedures.

Overall, the underground services activities were determined to be adequate, satisfactorily implemented and effective.

5.2.3 Hoisting

The audit team evaluated the following Hoisting Department implementing procedures:

WP 04-HO 1002, Rev. 6, *Salt Handling Shaft Hoist Operation*
WP 04-HO 1003, Rev. 7, *Waste Handling Hoist Operation*
WP 04-GC.01, Rev. 1, *Management of Mined Materials Plan*

The audit team observed the initial startup of the salt shaft hoist, shift turnover for the waste handling hoist, and the inspection of the salt pile for "excluded materials" above ground, and the mining and mucking operation underground. The audit resulted in one CAR (CAR 03-049) concerning the storage of QA records.

Overall, hoisting activities were determined to be adequate, satisfactorily implemented, and effective.

5.2.4 Mine Maintenance

The audit team evaluated the following Mine Maintenance Department implementing procedures:

WP-10-AD-3005, Rev. 2, *Control and Use of Maintenance Locks*
WP-10-WC 3010, Rev. 8, *Maintenance PM/MWI Controlled Document Processing*

The audit team examined the development of preventive maintenance procedures and work instructions by the facility engineers. The audit team also observed the control and issuance of maintenance locks, log entries associated with the maintenance locks, and the use of danger tags. No concerns were identified.

Overall, mine maintenance activities were determined to be adequate, satisfactorily implemented, and effective.

5.2.5 Mine Engineering

The audit team evaluated the following Mine Engineering Department implementing procedures:

WP 09-CN3007, Rev. 7, *Engineering and Design Document Preparation and Change Control*
WP 09-CN3024, Rev. 6, *Configuration Management Board/Engineering Change Proposal*

The audit team reviewed the records packages of ECOs and engineering change proposals (ECPs) completed by Mine Engineering Department personnel. Training records were also verified for Mine Engineering personnel who completed the records packages for ECOs and ECPs. The audit team identified one concern regarding added information in the ECO that was not initialed and dated. This was corrected during the audit by the person who added the information and the records package was

revalidated (see CDA 2).

Overall, mine engineering activities were determined to be adequate, satisfactorily implemented and effective.

5.2.6 Geotechnical Engineering

The audit team evaluated the following Geotechnical Engineering Department implementing procedures:

WP-07-315, Rev. 2, Chg. 1, *Data Collection from Boreholes for Excavation*
WP-07-EU1001, Rev. 0, *Geologic and Fracture Mapping of Facility Horizon Drifts*
WP-07-EU1301, Rev. 0, *Manually Acquired Geomechanical Instrument Data*
WP-07-EU1303, Rev. 0, *Geomechanical Instrument Data Processing*
WP-07-EU1304, Rev. 0, *Installing Convergence Reference Points*

The audit team observed the setting of the new Geomechanical Instruments System (GIS) convergence points, data collection from boreholes, and manual collection of data from monitoring and data collection (M&DC) instruments underground, and geotechnical instrument data processing above ground. Two CARs were written concerning the storage of QA records (CAR 03-048) and the calibration of M&DC equipment (CAR 03-049). One recommendation regarding the documentation of data was presented for management consideration (see Recommendation 2).

Overall, geotechnical engineering activities were determined to be adequate, satisfactorily implemented, and effective.

6.0 CARs, CDAs, OBSERVATIONS, RECOMMENDATIONS, AND EXEMPLARY PRACTICES

6.1 Corrective Action Report

6.1.1 CARs Initiated as a Result of CBFO Audit A-03-17

CAR 03-048 and CAR 03-049 were initiated as a result of Audit A-03-17 and have been transmitted to WTS under separate cover. A brief description of each CAR is provided below.

CBFO CAR 03-048

QA records generated from WP-EU1301, Rev. 0, WP-EU1003, Rev. 7, and WP-EU1002, Rev. 6, are being kept in 1- or 1-1/2-hour fire-rated cabinets in single storage. This does not meet the QAPD requirement for Storage, Preservation, and Disposition of QA Records.

CBFO CAR 03-049

The instruments being used to manually obtain geotechnical data have not been calibrated at regular intervals. Only seven of 24 pieces of equipment have been

entered into the M&DC calibration control system. One item, Cable Tension Indicator ZG0001, was last calibrated on March 27, 1997.

6.2 Deficiencies Corrected During the Audit (CDA)

Two deficiencies, requiring remedial action only, were identified during the audit. These were corrected before the completion of the audit. The CDAs are identified below and in the completed checklists, and documented on the CDA forms, which are maintained as CBFO QA records.

6.2.1 CDA No. 1

AIS Hoist Log 2002 had entries that had been overwritten; the portion of the checklist being performed was circled instead of being lined through, initialed, and dated; and on one day all entries were made using red ink. The manager and facility engineer reviewed each entry in the AIS Hoist Log 2002 and those that were incorrect were corrected.

6.2.2 CDA No. 2

ECO 10018 Equipment Removal "Electrical Equipment Number Request" for the Component Indices Database (page 8 of 12) had added information that was not initialed and dated. The person who added the information initialed and dated next to the added information and the records package was revalidated

6.3 Observations

No observations resulted from the audit.

6.4 Recommendations

Two recommendations are presented for WTS management consideration.

6.4.1 Recommendation 1

Initials in AIS Hoist Log 2002 are not associated with names or signatures of those making the entry. It is recommended that a method of identifying the initials be added to the log book.

6.4.2 Recommendation 2

The polling and recording of geomechanical data are collected on a quarterly basis, but more frequent readings are collected as determined by the cognizant engineer (CE) or manager (WP 07-01, R3, para. 3.2.4). Most data are collected more frequently than quarterly, based on verbal instructions from the CE. It is recommended that each reading (data logger and channel) be documented as to the frequency at which it is to be polled/collected.

7.0 LIST OF ATTACHMENTS

Attachment 1: Personnel Contacted During the Audit
Attachment 2: WTS Implementing Procedures

PERSONNEL CONTACTED DURING THE AUDIT

WTS PERSONNEL CONTACTED

NAME	ORGANIZATION	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Abernathy, Joel	WTS/Repository Development Project Hoisting Operations Bottomlander		X	
Beeman, Bob	WTS/Configuration Management Drafting Principal Engineer		X	
Bostick, Leroy	WTS/ Operations Deputy Manager	X		X
Brewer, Danny	WTS/Repository Development Project Mine Maintenance		X	
Briggs, Mark	WTS/Repository Development Project UG Maintenance Technician		X	
Burris, Lewis	WTS/ WTS/Repository Development Project Mining Maintenance Engineer		X	
Campbell, Jim	WTS/Hoisting Cognizant Engineer		X	
Compton, Brenda	WTS/Engineering File Room Lead		X	
Carrasco, Rey	WTS/ OPS Geotechnical Engineering Principal Engineer		X	X
Cassingham, Scott	WTS/Operations Technical Support			X
Cowart, Curtis	WTS/Repository Development Project Mining Acting Operations Manager		X	
Dodson, Tommy	WTS/Repository Development Project Hoisting Operations Toplander		X	
Dominguez, Sam	WTS/Geotechnical Engineering Geotech III /		X	
Dunlap, Roger	WTS/Repository Development Project Hoisting Operations		X	

PERSONNEL CONTACTED DURING THE AUDIT

WTS PERSONNEL CONTACTED

NAME	ORGANIZATION	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Estes, Tommy	WTS/Repository Development Project Hoisting Operations Bottomlander		X	
Flynn, Ed	WTS/I & C Maintenance Manager		X	
Galbraith, Don	CBFO/WIPP Facility Representative	X		
Garcia, Teddy	WTS/ Repository Development Project Hoisting Manager	X	X	X
Gilbert, Dennis A.	WTS/ Operations Maintenance Representative		X	
Gilbert, Jack	CBFO/ Office of Safety and Operations Acting Assistant Manager			X
Hernandez, David	WTS/Repository Development Project Mine Manager		X	
Hernandez, Ed	WTS/Repository Development Project Underground Controller		X	
Howard, Joel	WTS/Repository Development Project Underground Services Engineer		X	
Ingram, Wayne	WTS/Repository Development Project Underground Services Miner		X	
Jamison, Dale	WTS/Repository Development Project UG Maintenance Technician		X	
Kartenner, Rodney	WTS/Repository Development Project Hoisting Operations		X	
Keyser, Edgar	WTS/Repository Development Project Hoisting Operations Hoistman		X	

PERSONNEL CONTACTED DURING THE AUDIT

WTS PERSONNEL CONTACTED

NAME	ORGANIZATION	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Kirby, Bob	WTS/Underground Operations Manager	X	X	X
Kirkes, B. H.	WTS/Technical Training Manager			X
Littleton, Kathy	WTS/Geotechnical Engineering		X	
Lunsford, Kathy	WTS/Repository Development Project Operations Record Coordinator		X	
Marrs, Johnny	WTS/ Repository Development Project Mine Maintenance Manager	X		X
Mathieu, Dennis	WTS/Geotechnical Engineering Geotech III		X	
Modrall, Bobby	WTS/Repository Development Project Hoisting Operations Toplander		X	
North, William	WTS/Repository Development Project Operations Configuration Management		X	
Oliver, Mike	CBFO/ Office of Safety and Operations Systems Engineering Manager	X		
Parrish, Dale	WTS/Repository Development Project Underground Services Manager		X	
Patchet, Stan J.	WTS/ Repository Development Project Mine Engineering Manager	X		X
Sethi, Subhash	WTS/ Repository Development Project Manager	X		
Smith, Bart	WTS/Mine Operations Underground Services Roving Watch		X	

PERSONNEL CONTACTED DURING THE AUDIT

WTS PERSONNEL CONTACTED

NAME	ORGANIZATION	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Smith, Mark	WTS/Repository Development Project Mining Maintenance Engineer		X	
Treadway, Wayne	WTS/ Operations Tech Support Senior Engineer	X	X	X
West, Richard	WTS/Repository Development Project Mining Facility Services UG Engineer		X	
Whiteley, Ricky	WTS/Geotechnical Engineering Geotech III		X	
Will, Lisa	WTS/Quality Assurance Analyst	X		X
Vanderkraats, John	WTS/ Repository Development Project Geomechanical Engineering Manager	X		X
Youngerman, Steve	WTS/ Surface Operations & Maintenance Manager			X

WTS Implementing Procedures Included In Audit A-03-17	
Activities	**Applicable WTS Documents**
Mine Operations	WP 04-AD3008, Rev. 4, Shift Operating Logs WP 04-AD3011, Rev. 2, Equipment Tagout/Lockout WP 04-AD3012, Rev. 3, Temporary Plant Modification Control WP 04-AU1007, Rev. 3, Underground Openings Inspections WP 04-AU1027, Rev. 1, Underground Diesel Engine Emissions
Underground Services	WP 04-CM1304, Rev. 6, CMS Equipment Operation WP 04-ED1621, Rev. 7,U/G Electrical Distribution WP 04-ED1631, Rev. 4, U/G Backup Power Distribution WP 04-FP1401, Rev. 2., /G Fuel Station Operation WP 04-VU1608, Rev. 7, /G Ventilation and Filtration System Operation
Hoisting	WP 04-HO 1002, Rev. 6, Salt Handling Shaft Hoist Operation WP 04-HO 1003, Rev. 7, Waste Handling Hoist Operation WP 04-GC.01, Rev. 1, Management of Mined Materials Plan
Mine Maintenance	WP-10-AD-3005, Rev. 2, Control and Use of Maintenance Locks WP-10-WC 3010, Rev. 8, Maintenance PM/MWI Controlled Document Processing
Mine Engineering	WP 09-CN3007, Rev. 7, Engineering and Design Document Preparation and Change Control WP 09-CN3024, Rev. 6, Configuration Management Board/ Engineering Change Proposal.
Geotechnical Engineering	WP-07-315, Rev. 2, Chg. 1, Data Collection From Boreholes For Excavation WP-07-EU1001, Rev. 0, Geologic and Fracture Mapping of Facility Horizon Drifts WP-07-EU1301, Rev. 0, Manually Acquired Geomechanical Instrument Data WP-07-EU1303, Rev. 0, Geomechanical Instrument Data Processing WP-07-EU1304, Rev. 0, Installing Convergence Reference Points